



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Hugra, PDR

NOV 9 1977

MEMORANDUM FOR: Files

FROM: David P. Notley, Auxiliary Systems Branch, DSS

SUBJECT: UNDERWRITERS' LABORATORIES, INC. FIRE TEST OF
GENERAL ELECTRIC SILICON MATERIAL

Standard three-hour fire tests were run at the Underwriters' Laboratory, Inc. test facilities at Northbrook, Illinois, on Tuesday, August 30, and Friday, September 2, 1977, on silicon material manufactured by General Electric Company for use as a sealant in cable tray and conduit penetrations through fire barriers. Paul Herman of Rolf Jensen & Associates, Inc. attended the August 30 test on behalf of NRC. A copy of his report is attached. John Campbell of Gage-Rabcock & Associates, Inc., and I witnessed the September 2 test.

Both test specimens were arranged in a horizontal position as the top, or floor-ceiling, portion of the ASTM E-119 test furnace. Fourteen open ladder trays extended one foot into the test furnace and three feet on the cold (unexposed) side of the test assembly. The trays were filled to about half the tray depth with cable construction noted on the attached program card supplied by GE. The principal difference in the two test procedures was size of the openings. Three sealed openings were tested on August 30th:

1. 4 ft. x 5 ft. with ten (10) 18 inch trays
2. 2 ft. x 4 ft. with two (2) 36 inch trays
3. 2 ft. x 4 ft. with four (4) 18 inch trays.

The September 2nd test involved a single opening 4 ft. x 11 ft. with 14-18 inch trays. Construction of the seals for both tests was identical, except for wire reinforcement in the 4 x 11 ft. opening. Two steel reinforcing rods were built into the reinforced concrete frame across the four ft. dimension of the opening mid-way on the 11 ft. dimension at the three inch level of the 6 inch thick seal material. They are indicated on the attached GE card by the two lines (See September 2 test illustration). Wire mesh reinforcement was attached to these rods. The silicone material was poured in to a thickness of three (3) inches and wire mesh reinforcement laid in the other three open spaces between trays as shown by the cross-hatching on the GE card. Note also that trays 1 & 4 and 3 & 6 are in line with trays 7 & 11 and 10 & 14 respectively.

All trays were bolted to angle iron frames on both sides of the test assembly for rigidity. The angle iron frames were located against the wall and fastened thereto.

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